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Professional Career

Born 1965

1984-1991: M.Sc. (Diplom) in Chemistry at the University RWTH Aachen with parallel enrolment in the physics curriculum. Thesis titled "Geometrical shape of molecules in the solid state" (Geometrische Formen von Molekülen im Festkörper).

1991-1994: PhD at the Institute of Inorganic Chemistry at the University RWTH Aachen. Thesis titled "Crystal structure calculations on organometallic molecular compounds" (Kristallstruktur-berechnungen metallorganischer Molekülverbindungen). During this time funded by the German Student Foundation ("Studienstiftung des Deutschen Volkes").

1995-2002: Head of the Laboratory for Crystal Engineering and Polymorphism Studies at Hoechst AG (since 1997: Clariant GmbH) in Frankfurt am Main.

Research topics during this time:

Crystal structures and properties of organic pigments, including

- Prediction of crystal structures
- Structure-property relationships on organic pigments
- Crystal Engineering (Targeted synthesis of pigments based on the knowledge of the crystal structures)
- Crystal structure determination from X-ray powder diffraction data
- Synthesis and development of new pigments with improved properties
- Crystallization and polymorph screening

1998-2002: (In addition to the work at Clariant) University Teacher for crystallography at the Goethe-University in Frankfurt

Since 2002: University Professor for Solid-State Chemistry at the Institute of Inorganic and Analytical Chemistry of the Goethe-University in Frankfurt

Research Topics

Crystallography of crystalline, nanocrystalline and amorphous organic compounds, esp. pharmaceutical compounds and organic pigments, including:

- Crystal structure determination from powder diffraction data, including development of new methods
- Investigation of local structures of nanocrystalline and amorphous organic compounds by means of the pair distribution function (PDF)

- Method development: crystal structure determination of nanocrystalline organic compounds by a global fit to the pair distribution function (PDF)
- Structure-property relationship on organic pigments
- Crystal engineering
- Crystallisation of organic pigments and other poorly crystalline and difficult to crystallise compounds
- Polymorph screening and phase analysis of pharmaceutically active ingredients (PAI) and organic pigments
- Investigation of lattice defects in organic compounds by lattice-energy minimisation
- Investigation of disorder in organic compounds (e.g., stacking disorder, orientational disorder) by analysis of the diffuse scattering and lattice-energy calculations
- Measurement of X-ray powder diagrams
- Determination of storage stabilities for pharmaceutical compounds

Positions in Scientific Societies and Commissions

(selection)

- 2003 - 2012: Head of the regional section (with 1435 members) of the German Chemists' Society (GDCh)
- Since 2002: Member of the commission for student affairs of the Chemical Institutes of the Goethe University
- 2007 - 2012: Member of the central commission for student affairs of the Goethe University
- Since 2015: Vice-leader of the commission for student affairs of the Master course in Environmental Sciences of the Goethe University

Memberships:

- German Crystallographic Society (DGK)
- European Crystallographic Association (ECA)
- German Chemists' Society (GDCh)
- German University Professors' Association (DHV)
- Association of Scientists in the Chemical Industry (VAA)

Referee for the German Science Foundation (DFG) and the Swiss National Fond (SNF)

Referee for about 25 international journals, including *Angewandte Chemie*, *Acta Cryst.*, *IUCrJ*, *J. Appl. Cryst.*, *Z. Krist.*, *CrystEngComm*, *Crystal Growth&Design* etc.

Awards

- 1) Springorum-Medal of the Friends of the University RWTH Aachen (for a Diploma exam with the highest possible grade (excellent))
- 2) Borchers-Medal of the Friends of the University RWTH Aachen (for a PhD thesis with the highest possible grade (excellent))
- 3) Poster award of the International School of Crystallography: "Implications of Molecular and Materials Structure for New Technologies", Erice/Italy, 28 Mai to 7 June 1998
- 4) CCDC Poster Prize in Chemical Crystallography of the Cambridge Crystallographic Data Centre, 20th European Crystallographic Meeting, Kraków, 25 - 31 August 2001
- 5) Award for Excellent Teaching of the Department of Biochemistry, Chemistry and Pharmacy of the Goethe University, 2010

- 6) Award for Excellent Teaching of the Department of Biochemistry, Chemistry and Pharmacy of the Goethe University, 2012